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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,901

03/30/2004

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EXAMINER

ORTIZ RODRIGUEZ, CARLOS R

ART UNIT

PAPER NUMBER

2123

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/708,901	Applicant(s) SANKARANARAYANAN, SRIDHAR	
	Examiner CARLOS ORTIZ RODRIGUEZ	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-11 and 14-17 is/are rejected.
- 7) ☐ Claim(s) 5, 6, 12, 13 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim have been considered but are moot in view of the new ground(s) of rejection.

Specification

2. The abstract of the disclosure is objected to because: the phrase "*Attorney Client Privileged Communication Communication Honeywell Proprietary Draft: March 25, 2004 (5:12PM) Page 21*" seems to be a typographical errors and should be deleted.
Correction is required.

3. The disclosure is objected to because of the following informalities: Please note that the following phrases seem to be sub-headings and should be indented properly.

Paragraph 0030 Line 1, contains the phrase "1. Overview";

Paragraph 0032 Line 1, contains the phrase "2. Example Environment";

Paragraph 0040 Line 1, contains the phrase "3. Example Requirements";

Paragraph 0049 Line 1, contains the phrase "4. Method";

Paragraph 0056 Line 1, contains the phrase "5. Comparison with a Conventional Approach";

Paragraph 0061 Line 1, contains the phrase "6. Tables";

Paragraph 0080 Line 1, contains the phrase "7. Determining Intermediate Product Properties";

Paragraph 0092 Line 1, contains the phrase “8. Software-driven Implementation”;
and Paragraph 0098 Line 1, contains the phrase “9. Conclusion”.

Appropriate correction is required.

Allowable Subject Matter

3. Claims 5, 12 and 18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 6 and 13 would also be allowable due to their dependency to claim 5 and 12, respectively.

Claim Objections

5. (Claim 6 Line 1) objected to because of the following informalities: the term “said finding” seems to be “said searching” in order to be consistent with the base claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 7-11 and 14-17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard et al. U.S. Patent No. 3,826,904 (hereinafter Leonard) in view of Kwak U.S. Patent No. 6,866,830 (hereinafter Kwak).

a. **Regarding claim 1, 8 and 14** , Leonard discloses

a blender (Figure 1, blending tank 1)

a plurality of outlets (Figure 2 and C4 L63-65, see outlets from storage facilities, not shown),

wherein each of said plurality of outlets provides a corresponding one of said plurality of components according to a corresponding flow rate for blending by said blender; a plurality of source controllers, wherein each of said plurality of source controllers controls the flow rate of a corresponding one of said plurality of outlets; and a blend controller determining the flow rate for each of said plurality of source controllers (see Figure 1 and at least C5 and C6)

blending a plurality of components to produce a product having a plurality of target properties (C2 L23-25),

each of said plurality of components impacting one or more of said plurality of target properties (C2 L23-44, see that all components are needed to meet customer's desire)

and at least some of said plurality of target property being impacted by multiple components when blended (C2 L23-44, see that the viscosity is being affected by the multiple components),

receiving in a digital processing system data indicating said plurality of target properties, the manner in which each of said plurality of components impacts any of said plurality of target properties (C11 L1-62),

and an aggregate volume of said product to be produced (C3 L44-47, C11 L4-5, see volume-fraction and quantities);

determining in said digital processing system an intermediate blend point at or after said time instance such that a corresponding intermediate properties combination can be attained at said intermediate blend point by blending only the available ones of said plurality of components (see equations 3-6 and please note that the intermediate blend point is being interpreted as the point when all the components are blended because after all oils are blended it is possible to further blend them with other components)

and controlling flow rates of each of said plurality of components (Fig 1 and C5 L1-14)

to attain said intermediate properties combination at said intermediate blend point, and to attain said plurality of target properties from said intermediate

properties combination after said intermediate blend point whereby said product of said aggregate volume is generated by blending said plurality of components (C11 L50-62).

But Leonard fails to clearly specify wherein a first component comprised in said plurality of components being scheduled to be available for said blending only at a time instance which is after a substantial continuous duration from start of said blending and that said plurality of target properties can be attained by further blending said plurality of components including said first component from said intermediate blend point which would produce said aggregate volume of said product

However, Kwak discloses wherein a first component (alkaline solution) comprised in said plurality of components (please note that the plurality of components comprise: alkaline solution, gasoline-based fractions, kerosene fractions, diesel fractions, acid solution) being scheduled to be available for said blending only at a time instance which is after a substantial continuous duration from start of said blending (C8 L64-67 and C9 L1-5, see that the alkaline solution is scheduled to be available for blending only after condensing and mixing the reformed gasoline-based fraction or the fractioned kerosene and diesel oil fractions, respectively, with an acid solution); and said plurality of target properties can be attained by further blending said plurality of components including said first component from said intermediate blend point which would produce said aggregate volume of said product (C8 L64-67 and C9 L1-5, see

that the mixture is transferred to a second refining tank and then condensed and mixed with the alkaline solution).

Leonard and Kwak are analogous art because they are from the same field of endeavor. They both relate to blending/mixing techniques.

Therefore at time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention disclosed by Leonard and combining it with the invention disclosed by Kwak.

One of ordinary skill in the art would have been motivated to do this modification in order to obtain gasoline-based fraction of a good quality at a high fraction as suggested by Kwak (see for example, C2 L29-32).

b. **Regarding claim 2, 9, 15**, the combination of Leonard and Kwak discloses all the limitations of the base claims as outlined above.

Kwak further discloses wherein said determining determines said intermediate blend point to meet a desired criteria (C8 L64-67).

c. **Regarding claim 3, 10, 16**, the combination of Leonard and Kwak discloses all the limitations of the base claims as outlined above.

Leonard further discloses wherein said desired criteria comprises minimizing total cost of said plurality of components blended to produce said product (Abstract L8-11).

d. **Regarding claim 4, 11, 17**, the combination of Leonard and Kwak discloses all the limitations of the base claims as outlined above.

Leonard further discloses wherein each of said plurality of components are provided for blending by a corresponding plurality of outlets (Figure 1 and C4 L63-65), wherein each of a plurality of source controllers control the flow rate of a corresponding one of said plurality of outlets (Figure 1 and C5 L15-23); and

determining in said digital processing system each of a first plurality flow rates for a corresponding one of each of said plurality of components before said intermediate blend point such that said intermediate properties combination is attained for said product at said intermediate blend point ; and wherein said controlling is performed by operating said plurality of outlets according to said first plurality of flow rates before said intermediate blend point (Fig 1 and C5 L1-14).

Kwak further discloses determining in said digital processing system each of a second plurality flow rates for a corresponding one of each of said plurality of components after said intermediate blend point such that said plurality of target properties are attained for said product after said intermediate blend point, and wherein said controlling is performed by operating said plurality of outlets according to said second plurality of flow rates after said intermediate blend point (C5 L12-45, C6 L1-18, C7 L2-13 and C8 L1-10 see for example using different flow rates at different phases).

- e. **Regarding claim 7**, the combination of Leonard and Kwak discloses all the limitations of the base claims as outlined above.

Kwak further discloses wherein said method is performed in an oil refinery (C1 L51-53 and C2 L60-67).

Citation of Pertinent Prior Art

8. Applicant is respectfully requested to fully consider all the references, in entirety, that appear on the attached list (Form PTO-892). These references disclose subject matter similar to that of applicant's disclosure and may be relied on in a future response to Applicant's remarks or amendments.

Please note below a list of the patents that appear on the Form PTO-892 including their relevance to the instant application.

- a. U.S. Patent No. 5,093,533 to Wilson, which discloses blending components with natural gasoline component to produce an intermediate blended product, said intermediate blended product subsequently being blended with said octane-enhancing component (see for example claim 1).
- b. U.S. Patent No. 6,799,883 to Urquhart et al., which discloses mixing a first chemical in a controlled manner to provide a first solution having a predetermined formulation; and mixing a third chemical with the first solution in a controlled manner to provide a second solution having a predetermined formulation (see for example C3 L65-67 and C4 L1-4).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is 571-272-3766.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Carlos Ortiz-Rodriguez
Patent Examiner
Art Unit 2123

May 29, 2008

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123